Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1-10, 22-30, 43-62, 64-68, 73-109, and 138 are pending in the application, with claim 1 being the independent claim. Claims 11-21, 31-42, 63, 69-72, and 110-137 have been cancelled without prejudice to or disclaimer of the subject matter therein. Claims 1, 2, 5, 62, 64-66, and 73-75 have been amended. It is believed these changes introduce no new matter, and their entry is respectfully requested.

Based on the above amendment and the following remarks, Applicant(s) respectfully request(s) that the Examiner reconsider all outstanding objections and rejections and request that they be withdrawn.

Rejections under 35 U.S.C. § 112 - written description

Claims 1-10, 22-30, 43, 59-62, and 64-88 were rejected under 35 U.S.C. § 112, first paragraph as allegedly failing to comply with the written description requirement. Paper 12, p. 4. Applicants respectfully traverse the rejection.

Claim 1 has been amended to recite the term "mammalian" host cells and the phrase "wherein said library is constructed in a poxvirus vector, an adenovirus vector or a herpesvirus vector." As amended, claim 1 is directed to a method of selecting a polynucleotide from a library constructed in a *particular viral vector* and expressed in *mammalian host cells*, by culturing the host cells under conditions allowing expression

of the insert polynucleotides, and collecting insert polynucleotides from those host cells which undergo cell death.

The present claims are therefore analogous to the claims at issue in *Amgen Inc. v. Hoechst Marion Roussel Inc.*, 314 F.3d 1313 (Fed. Cir. 2003). In *Amgen*, the claims at issue recited "vertebrate" host cells and "mammalian" host cells. The accused infringer asserted that the claims were not adequately described for their full scope because the specification only disclosed two examples of host cells, CHO and COS-1. The district court and the Federal Circuit both rejected this assertion. Circuit Judge Michel, writing for the Federal Circuit, stated,

> when used, as here, merely to identify types of cells . . . ., the words "vertebrate" and "mammalian" readily "convey[ ] distinguishing information concerning [their] identity" such that one of ordinary skill in the art could "visualize or recognize the identity of the members of the genus."

Amgen, 314 F.3d 1313, 1332 (citing *Eli Lilly*).

The opinion further stated, "[i]ndeed, the district court's reasoned conclusion that the specification's description of producing the claimed EPO in two species of vertebrate or mammalian cells adequately supports claims covering EPO made using the genus vertebrate or mammalian cells, renders *Eli Lilly* listless in this case." *Id.* Thus, the Federal Circuit rejected applying the reasoning in *Eli Lilly* to the claim term "mammalian host cell," even when the specification described *only two species* within the genus.

Moreover, the present application describes numerous species of "mammalian" host cell. For example, the specification describes the cell types recited in claim 6 in

paragraphs [0358]-[0359] (pp. 67-68), paragraphs [0377]-[0392] (pp. 74-79), [0480]-[0485] (pp. 105-108), [0510]-[0511] (pp. 116-117), and paragraph [0538] (pp.126-127). Thus, even under the reasoning of *Eli Lilly*, the present application adequately describes the claimed genus of "mammalian" host cells.

Additionally, the application describes numerous species of library polynucleotide inserts. For example, the library species recited in claim 10 are described at paragraphs [0375]-[0376] (pp. 73-74). Further, the specification states that the insert polynucleotides composing the library may be from any source such as a cell line, biological sample, or patient sample (paragraph [0375]). Examples of these sources are found throughout the specification, including at paragraphs [0408]-[0423] (pp. 84-89), [0464]-[0485] (pp. 101-108), [0510]-[510] (pp. 116-117), and [0516]-[0538] (pp. 119-127).

Further, contrary to the statement at page 6 of the Office Action, Applicants assert that it is not necessary to describe the identifying characteristics of potential target polynucleotides because the claims are not directed to these target polynucleotides per se, but rather they are directed to a method of selecting them, without any foreknowledge of what their identifying characteristics may be. Nevertheless, the specification describes numerous species of *potential* target polynucleotide at paragraphs [0408]-[0423] (pp. 84-89), [0464]-[0485] (pp. 101-108), [0510]-[510] (pp. 116-117), and [0516]-[0538] (pp. 119-127).

The specification also describes numerous suicide genes and toxic gene products besides diphtheria toxin A subunit, for example, at paragraph [0455] (p. 99), and in Examples 7, 11, 12, and 14.

Therefore, Applicants respectfully assert that the specification adequately describes a representative number of species within the scope of the claimed genus. To focus on a preferred embodiment, as did the Office Action, is to ignore the vast majority of the detailed description, which describes numerous other embodiments. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Rejections under 35 U.S.C. § 112, second paragraph

Claims 69-70 were rejected under 35 U.S.C. § 112, second paragraph for allegedly being indefinite. Paper 12, p. 6. The Office Action states that there is no antecedent basis for the limitation "naturally occurring genome." *Id.* Applicants respectfully traverse the rejection.

Applicants note that the "naturally occurring genome" is an inherent feature of the element "eukaryotic virus vector." As such, it does not require an antecedent recitation for the claims to be clear and definite. MPEP 2173.05(e). Nevertheless, Applicants have cancelled claims 69-70. Therefore, the rejection is moot. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Rejections under 35 U.S.C. § 102

Claims 1-10, 22-30, 43, 60, 62, 64-71, and 76-79 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent 5,712,115 (Hawkins et al.). Paper 12, p. 7. Applicants respectfully traverse the rejection.

The present claims are directed to a method of selecting a polynucleotide from a library constructed in a particular viral vector and expressed in mammalian host cells, by

culturing the host cells under conditions allowing expression of the insert polynucleotides, and collecting insert polynucleotides from those host cells which undergo cell death.

Hawkins et al. do not teach or suggest the claimed invention. Hawkins et al. disclose a polynucleotide encoding a cell death associated protein (cdap), the cloning of the isolated polynucleotide into other plasmids and expression vectors (cols. 9-12), the recombinant expression and purification of cdap protein (cols. 9-12), and the identification of cells expressing recombinant cdap by virtue of their apoptotic phenotype (col. 12). At a minimum, this disclosure fails to teach or suggest a *selection* method, comprising introducing a polynucleotide *library* into mammalian cells, culturing the cells, and *collecting* insert polynucleotides from the *actual host cells* that undergo cell death.

Hawkins et al. also disclose an example in which a library was constructed in bacterial cells, and there was *no* expression of the bacterial library (cols. 23-24). Random isolates of the library were then sequenced (col. 24). At a minimum, this disclosure fails to teach or suggest a *selection* method, comprising introducing a polynucleotide library into *mammalian cells*, culturing the cells, and *collecting* insert polynucleotides from the *actual host cells* that undergo cell death.

The present claims are therefore novel over Hawkins et al. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Claims 1-10, 22-30, 43-62, 64-88, and 138 were rejected under 35 U.S.C. § 102(e) over US 2003/0133917 A1 (Zauderer). Paper 12, p. 7. Applicants respectfully traverse the rejection.

Applicants have amended claim 1 to recite "wherein said cell death is not the result of a cytotoxic T lymphocyte-induced lytic event." Support for the amendment is found at paragraph [0373] (p. 73). Therefore, the rejection is moot. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Other matters - restriction requirement

The Office Action states that group IV (claims 89-109) is directed to a method of constructing a library of insert polynucleotides. Paper 12, p. 2. Applicants again disagree with this characterization of claims 89-109. Claim 89 depends from claim 60. Claim 60 depends from claim 1. All of claims 1, 60, and 89 recite a *method of selecting* a target polynucleotide. Claim 89 further specifies how the library of inserts is produced from which the target polynucleotide is selected. Claims 90-109 all depend from claim 89, and also further limit the *method of selecting* a target polynucleotide. Therefore, claims 89-109 should be examined with Group I. Reconsideration of the restriction requirement is respectfully requested.

Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicant(s) therefore respectfully request(s) that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicant(s) believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will

expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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